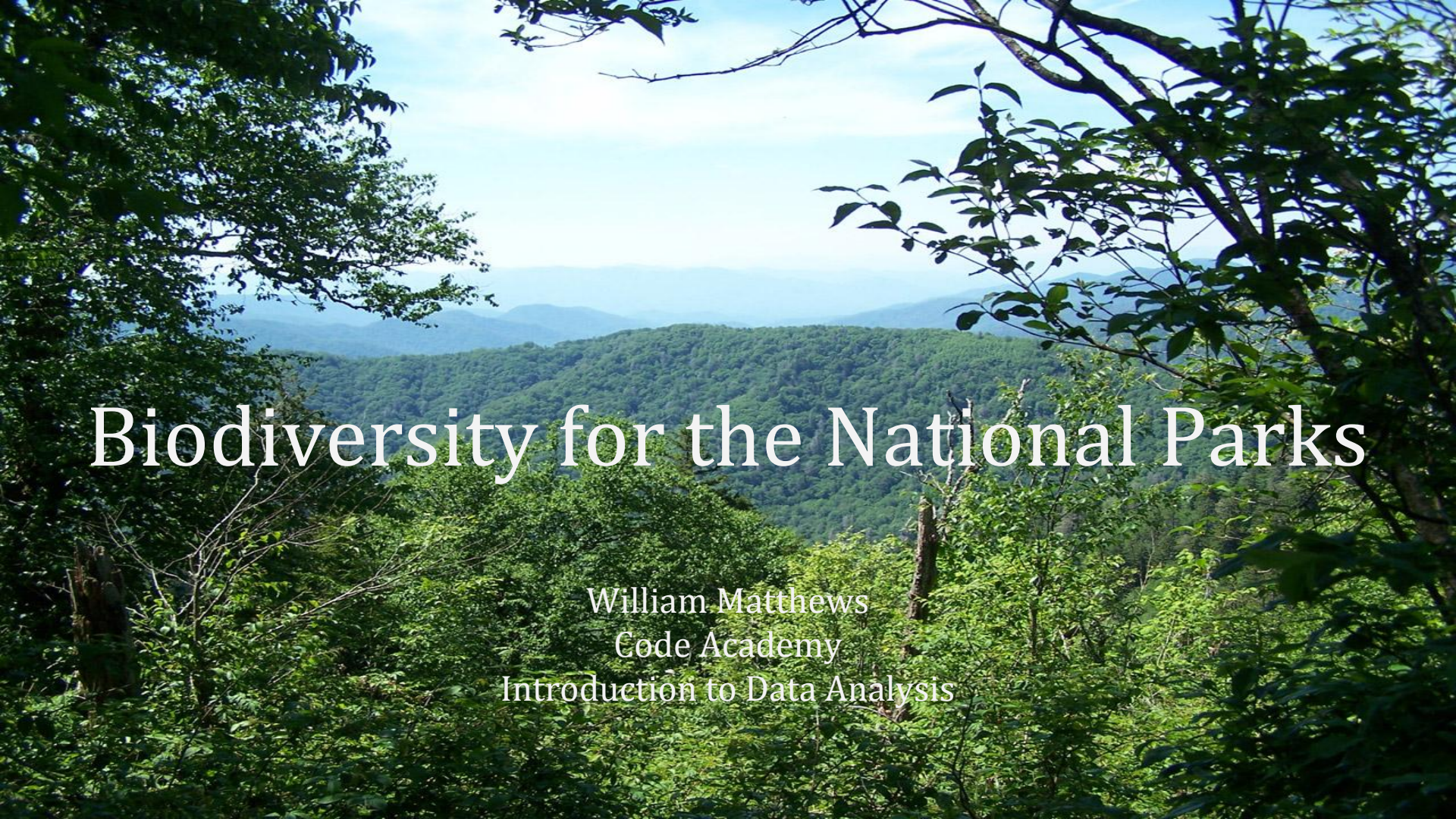

Biodiversity for the National Parks

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Code Academy
Introduction to Data Analysis

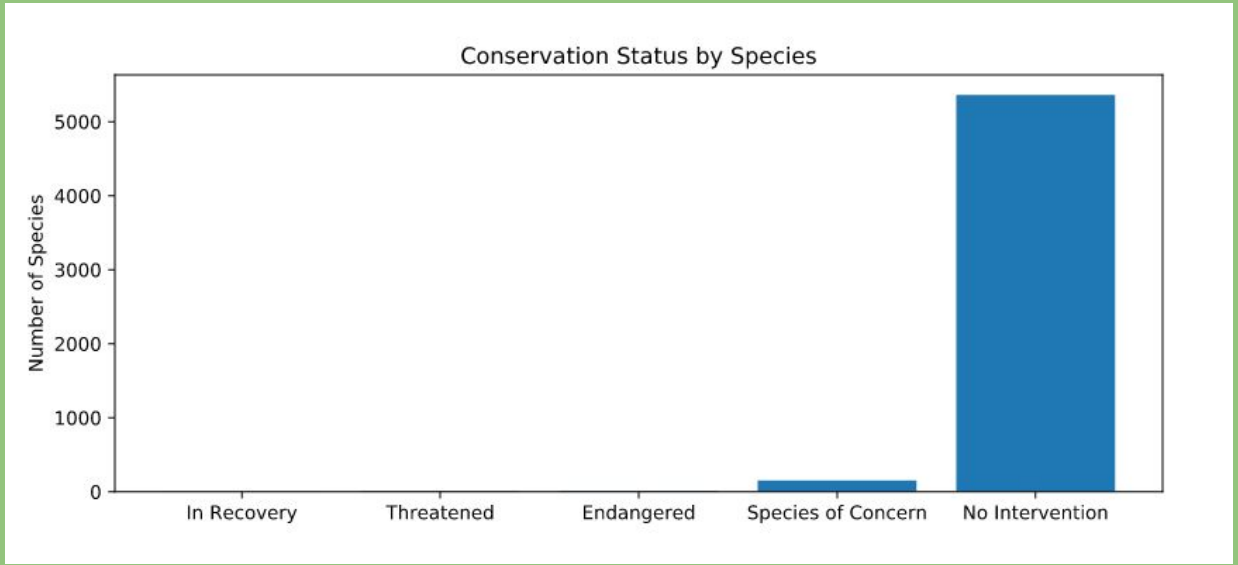
Species Information

- 5541 Different species among 7 different classifications (mammal, reptile, bird, fish, amphibian, vascular plant, nonvascular plant)

- All species are sorted into 5 different endangered statuses (No Intervention, Species of Concern, Threatened, Endangered, In Recovery)

Endangered Status: Trends and Calculations

- No Intervention: 5363
- Species of Concern: 151
- Threatened: 10
- Endangered: 15
- In Recovery: 4



Endangered Status: Trends and Calculations

	Not Protected	Protected	Percent Protected
Mammals	146	30	17%
Reptiles	73	5	6.4%
Amphibians	72	7	8.9%
Fish	115	11	8.7%
Birds	413	75	15.4%
Vascular Plants	4216	46	1%
Nonvascular Plants	328	5	1.5%

Endangered Status: Trends and Calculations

Are certain types of species more likely to be endangered?

Yes, Birds and Mammals

- Comparing the percentage of protected Birds to that of Mammals leads to a p-value (0.688) that is not significant and thus shows that the slight difference between protected Birds and Mammals is by chance

- However, comparing Mammals (Reptiles: 0.038, Fish: 0.056, Amphibians: 0.128) and Birds (Reptiles: 0.053, Fish: 0.077, Amphibians: 0.176) to other animal types leads to significant p-value differences and demonstrates that Birds and Mammals or more likely to be endangered.

Recommendations

- Continue to carefully track and monitor endangered bird and mammal species for population changes

- Also closely monitor non-protected bird and mammal species in case any concerning population fluctuations occur

Foot and Mouth Disease: Sample Size Determination

- With foot and mouth disease occuring in sheep at a baseline rate of 15%, I calculated that 510 sheep would need to be observed to tell if a 5% drop in cases was significant or not.

- This would take about one week at Yellowstone NP or two weeks at Bryce NP.